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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/711,651	11/13/2000	Keeichi Nito	09792909-4679	7866

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EXAMINER	
CHOI, WILLIAM C	
ART UNIT	PAPER NUMBER
2873	

DATE MAILED: 07/18/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/711,651	NITO ET AL.	
	Examiner	Art Unit	
	William C. Choi	2873	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 April 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-162* is/are pending in the application.

4a) Of the above claim(s) *1-5,20-72,87-110 and 125-148* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *6-11,13-17,19,73-86,111-116,118-122,124 and 149-162* is/are rejected.

7)☒ Claim(s) *12,18,117 and 123* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 November 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Election/Restrictions

Applicant's election of Group II, claims 6-19, 73-86, 111-124 and 149-162 in Paper No. 7 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claims 1-5, 20-72, 87-110 and 125-148 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made without traverse in Paper No. 7.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 73-86 and 149-162 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Specifically, in reference to these claims, applicant discloses an "image pickup apparatus" and method of driving one, but does not disclose in the claims or otherwise in the specification further description of what an "image pickup apparatus" is, thereby not enabling one skilled in the art to make or use the invention.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-
(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

Claims 6, 8-10, 16, 19, 111, 113-115, 121 and 124 are rejected under 35 U.S.C. 102(e) as being anticipated by Nito et al.

In regards to claims 6 and 111, Nito et al discloses a liquid crystal device (column 7, lines 8-25, Figure 12) wherein the transmittance of light incident on said device is controlled by modulating the pulse width of each drive pulse applied to the device (column 6, lines 21-27). The device of Nito will inherently comprise a drive pulse generation unit for driving said liquid crystal device and a pulse width control unit for modulating a pulse width of each drive pulse. This being reasonably assumed from Nito et al disclosing the drive method including the modulation of the pulse width applied to said liquid crystal display (Abstract and column 11, lines 49-61).

Regarding claims 8 and 113, Nito et al discloses wherein an average per unit time of positive and negative pulse heights of drive pulses applied between drive electrodes of said liquid crystal device upon modulation of the pulse width of each drive pulse is preferably near zero (column 17, lines 43-54, Figure 8).

Regarding claims 9 and 114, Nito et al discloses wherein the modulation of the pulse width of each drive pulse is performed in such a manner that the waveform of each drive pulse is present in a period of a basic frequency (Figure 8).

Regarding claims 10 and 115, Nito et al discloses wherein the basic frequency and the modulated pulse width are adjusted in such a manner as to prevent the occurrence of flicker in stationary drive of said light modulation apparatus (column 1, lines 57-60, column 7, lines 8-25 and column 11, lines 43-48).

Regarding claims 16 and 121, Nito et al discloses said image pickup apparatus further comprising a polarizing plate disposed in an optical path of light made incident on said liquid crystal device (column 12, lines 1-3 and column 14, line 64 – column 15, line 5, Figure 2, "13").

Regarding claims 19 and 124, Nito et al discloses wherein a drive electrode of said liquid crystal device is formed at least over the entire region of an effective light transmission portion (column 7, lines 8-13, Figure 12, "2a" or "2b").

Claims 6, 7, 16 and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by Plangger.

In regards to claim 6, Plangger discloses a light modulation apparatus comprising a liquid crystal device (column 1, lines 5-13 and column 2, lines 35-50, Figure 1); drive pulse generation unit for driving said liquid crystal device (Figure 2, "10"); a pulse width control unit (Figure 2, "14") for modulating a pulse width of each drive pulse to be applied to said liquid crystal device, thereby controlling a transmittance of light made incident on said liquid crystal (column 2, line 51 – column 3, line10).

Regarding claim 7, Plangger discloses wherein the pulse width of each drive pulse being modulated with its pulse height kept constant (column 2, line 61 – column 3, line 10, Figures 3a-3f).

Regarding claims 16 and 17, Plangger discloses said device further comprising a polarizing plate movable in or from the optical path (column 2, lines 44-46). (Plangger discloses that the device can comprise polarizers if found "necessary", indicating that they are inherently movable "in or from the optical path").

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 11 and 116 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nito et al as applied to claims 6 and 111 respectively, and further in view of Inuzuka et al.

In regards to these claims, Nito et al discloses as set forth above but does not specifically disclose said apparatus further comprising a drive circuit unit, wherein each drive pulse whose waveform is present in the period of the basic frequency is generated in synchronization with a clock generated by said drive circuit unit. In the field of liquid crystal apparatuses, Inuzuka et al teaches that it would be favorable for a liquid crystal device to comprise a drive circuit unit wherein the drive pulses are generated in synchronization with a clock generated by said drive circuit unit for the purpose of providing an improved liquid crystal display apparatus (column 3, lines 2-43 and column 4, line 60 – column 5, line 13, Figure 6).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made for the apparatus of Nito et al to comprise a drive circuit unit, wherein each drive pulse whose waveform is present in the period of the basic frequency is generated in synchronization with a clock generated by said drive circuit unit since Inuzuka et al teaches that it would be favorable for a liquid crystal device to comprise a drive circuit unit wherein the drive pulses are generated in synchronization with a clock generated by said drive circuit unit for the purpose of providing an improved liquid crystal display apparatus.

Claims 13-15 and 118-120 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nito et al as applied to claims 6 and 111 respectively, and further in view of Harada et al.

In regards to claims 13 and 118, Nito discloses as set forth above but does not specifically disclose said liquid crystal device being a guest-host type device. Within the field of liquid crystal devices, Harada et al teaches that it would be favorable for a liquid crystal device to be a guest-host type device for the purpose of providing higher optical contrast (column 3, lines 57-63 and column 11, line 65 – column 12, line 2).

Regarding claims 14 and 119, Harada et al further teaches the host material being a liquid crystal (column 11, lines 38-42), which will inherently be a negative or positive type liquid crystal having a negative or positive type dielectric constant anisotropy.

Regarding claims 15 and 120, Harada et al further teaches the guest material of said liquid crystal device being a dichroic dye molecular material (column 11, line 65 –

column 12, line 2), which will inherently be a negative or positive type having a negative or positive type light absorption anisotropy

Allowable Subject Matter

Claims 12, 18, 117 and 123 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: in reference to the allowable claims, none of the prior art either alone or in combination disclose or teach of the claimed limitations to warrant a rejection under 35 USC 102 or 103.

The prior art fails to teach a combination of all the claimed features as presented in claims 12 and 117: a light modulation apparatus or method of driving one comprising a light modulation apparatus comprising: a liquid crystal device; drive pulse generation unit as claimed; a pulse width control unit as claimed and specifically further comprising a control circuit unit, wherein luminance information of the light emerged from said liquid crystal device is fed back to said control circuit unit, and the pulse width of each drive pulse is modulated in synchronization with a clock generated by said drive circuit unit on the basis of a control signal supplied from said control circuit unit.

The prior art fails to teach a combination of all the claimed features as presented in claims 18 and 123: a light modulation apparatus or method of driving one comprising a light modulation apparatus comprising: a liquid crystal device; drive pulse generation

unit as claimed; a pulse width control unit as claimed; a polarizing plate movable in or from the optical path and specifically further wherein said polarizing plate is disposed in a movable portion of a mechanical iris in such a manner as to be movable in or from the optical path by operation of said movable portion of said mechanical iris.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William C. Choi whose telephone number is (703) 305-3100. The examiner can normally be reached on Monday-Friday from about 9:00 am to 6 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Y. Epps can be reached on (703) 308-4883. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3431 for regular communications and (703) 305-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

William Choi
Patent Examiner
Art Unit 2873
July 15, 2002

Georgia Epps
Supervisory Patent Examiner
Technology Center 2800